

Study Area: **SCE Bulk**



Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	2025 Summer Partial Peak	N/A	N/A	
Bulk-SP-T-1	Lugo-Victorville 500 kV	Lugo-Eldorado 500 kV	P1	L-1	<100	<100	<100	<100	<100	107.86			Increase line rating
Bulk-SP-T-2	Lugo-Victorville 500 kV	Lugo-Eldorado 500 kV and Eldorado-Mohave/Lugo-Mohave 500 kV lines	P6	L-1/L-1	111.47	113.25	120.03	<100	<100	137.68			Increase line rating
Bulk-SP-T-3	Midway-Whirlwind 500 kV	N-2 Midway-Vincent 500kV lines with RAS	P7	L-2	109.34	107.49	107.59	<100	<100	108.45			Reduce transfers on Path 26 within 30 minutes after the contingency.
Bulk-SP-T-4	Otay Mesa-Tijuana 230 kV	Eco-Miguel 500 kV and Ocotillo-Suncrest 500 kV lines	P6	L-1/L-1	<100	124.70	131.70	Diverge	<100	Diverge			Systems adjustments after initial contingency including IV phase shifter adjustment and dispatching preferred resources.
Bulk-SP-T-5	La Rosita-Imperial Valley 230 kV	Eco-Miguel 500 kV and Ocotillo-Suncrest 500 kV lines	P6	L-1/L-1	116.76	116.34	115.37	Diverge	<100	Diverge			Systems adjustments after initial contingency including IV phase shifter adjustment and dispatching preferred resources.
Bulk-SP-T-6	Barre-Ellis 230 kV lines #1-4	Eco-Miguel 500 kV and Ocotillo-Suncrest 500 kV lines	P6	L-1/L-1	<100	102.32	<100	<100	<100	Diverge			Systems adjustments after initial contingency including IV phase shifter adjustment and dispatching preferred resources.
Bulk-SP-T-7	N/A	Eco-Miguel 500 kV and Ocotillo-Suncrest 500 kV lines with Otay-Mesa-Tijuana 230 kV line tripped	P6	L-1/L-1	Diverge	Diverge	Diverge	Diverge	Converge	Diverge			Systems adjustments after initial contingency including IV phase shifter adjustment and dispatching preferred resources.
Bulk-SP-T-8	N/A	Eco-Miguel 500 kV and Ocotillo-Suncrest 500 kV lines with La Rosita-Imperial Valley 230 kV line tripped	P6	L-1/L-1	Diverge	Diverge	Diverge	Diverge	Converge	Diverge			Systems adjustments after initial contingency including IV phase shifter adjustment and dispatching preferred resources.
Bulk-SP-T-9	Delaney - Palo Verde 500 kV	Palo Verde - Colorado River 500 kV and N. Gila - Imperial Valley 500 kV	P6	L-1/L-1	<100	<100	<100	<100	<100	110.79			Reduce transfers on WOR/EOR after initial contingency

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Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Summer Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
X-VD-1													

No voltage deviations identified.

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High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Summer Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
X-V-1													

No high/low voltage violations identified.

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Transient Stability

ID	Contingency	Category	Category Description	Transient Stability Performance								Potential Mitigation Solutions
				2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Summer Off-Peak	2020 Spring Light Load	2025 Summer Partial Peak	N/A	N/A	
Bulk-TS-1	Palo Verde–Colorado River & Imperial Valley–N.Gila 500 kV lines (without reducing transfers on WOR & EOR after the initial contingency)	P6	L-1/L-1	Did not meet voltage dip requirements								Reduce transfers on WOR/EOR after initial contingency, further evaluation
Bulk-TS-2	Devers 500/230 kV 1AA Transformer Bank & Devers-Red Bluff 500 kV ck 2	P6	L-1/L-1	Diverge								Local Generation Tripping, further evaluation

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Single Contingency Load Drop

ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)								Potential Mitigation Solutions
				Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	
X-SLD-1												

No single contingency resulted in total load drop of more than 250 MW.

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Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)								Potential Mitigation Solutions
		Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	
X-SS-1										

No single source substation with more than 100 MW Load